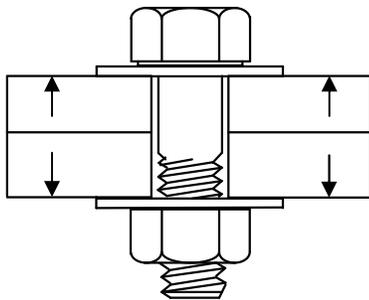


# Shear Strengths Comparison Grades 2, 5 & 8

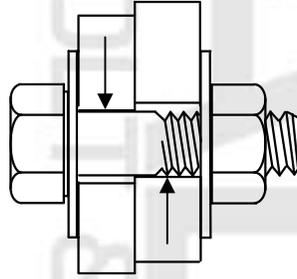


## Comparison of Shear Strengths of Grade 2, 5 and 8 Screws

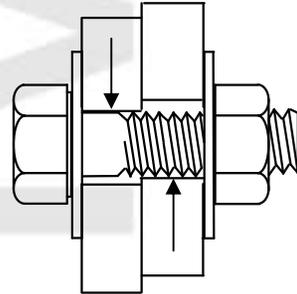
The industry standard for determining shear strengths of fasteners is to take 60% of the minimum Ultimate Tensile Strength of the fastener for single shear joints and 120% for double shear joints.



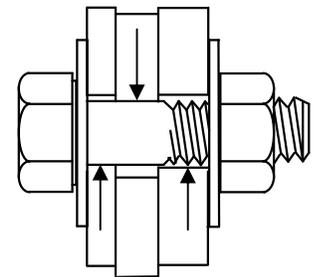
Tensile Joint Loading



Single Shear Joint  
Forces Exerted on Shank



Single Shear Joint  
Forces Exerted on Threads



Double Shear Joint  
Forces Exerted on Shank

Dia.	TPI	Area Stress Threads	Area Stress Shank	Grade 2 - 74,000 psi (>3/4" - 60,000 psi)			Grade 5 - 120,000 psi (>1Ø - 105,000 psi)			Grade 8 - 150,000 psi		
				Min Tensile Strength Threads (Lbs)	Single Shear Shank (Lbs)	Single Shear Threads (Lbs)	Min Tensile Strength Threads (Lbs)	Single Shear Shank (Lbs)	Single Shear Threads (Lbs)	Min Tensile Strength Threads (Lbs)	Single Shear Shank (Lbs)	Single Shear Threads (Lbs)
1/4	20	0.0318	0.0491	2,353	2,179	1,412	3,816	3,534	2,290	4,770	4,418	2,862
	28	0.0364	0.0491	2,694	2,179	1,616	4,368	3,534	2,621	5,460	4,418	3,276
5/16	18	0.0524	0.0767	3,878	3,405	2,327	6,288	5,522	3,773	7,860	6,903	4,716
	24	0.058	0.0767	4,292	3,405	2,575	6,960	5,522	4,176	8,700	6,903	5,220
3/8	16	0.0775	0.1104	5,735	4,904	3,441	9,300	7,952	5,580	11,625	9,940	6,975
	24	0.0878	0.1104	6,497	4,904	3,898	10,536	7,952	6,322	13,170	9,940	7,902
7/16	14	0.1063	0.1503	7,866	6,675	4,720	12,756	10,824	7,654	15,945	13,530	9,567
	20	0.1187	0.1503	8,784	6,675	5,270	14,244	10,824	8,546	17,805	13,530	10,683
1/2	13	0.1419	0.1964	10,501	8,718	6,300	17,028	14,137	10,217	21,285	17,672	12,771
	20	0.1599	0.1964	11,833	8,718	7,100	19,188	14,137	11,513	23,985	17,672	14,391
9/16	12	0.182	0.249	13,468	11,034	8,081	21,840	17,892	13,104	27,300	22,365	16,380
	18	0.203	0.249	15,022	11,034	9,013	24,360	17,892	14,616	30,450	22,365	18,270
5/8	11	0.226	0.307	16,724	13,622	10,034	27,120	22,089	16,272	33,900	27,612	20,340
	18	0.256	0.307	18,944	13,622	11,366	30,720	22,089	18,432	38,400	27,612	23,040
3/4	10	0.334	0.442	24,716	19,615	14,830	40,080	31,809	24,048	50,100	39,761	30,060
	16	0.373	0.442	27,602	19,615	16,561	44,760	31,809	26,856	55,950	39,761	33,570
7/8	9	0.462	0.601	27,720	21,648	16,632	55,440	43,295	33,264	69,300	54,119	41,580
	14	0.509	0.601	30,540	21,648	18,324	61,080	43,295	36,648	76,350	54,119	45,810
1	8	0.606	0.785	36,360	28,274	21,816	72,720	49,480	38,178	90,900	70,686	54,540
	14	0.68	0.785	40,800	28,274	24,480	81,600	49,480	42,840	102,000	70,686	61,200
1 1/8	7	0.763	0.994	45,780	35,785	27,468	80,115	62,623	48,069	114,450	89,462	68,670
	12	0.856	0.994	51,360	35,785	30,816	89,880	62,623	53,928	128,400	89,462	77,040
1 1/4	7	0.969	1.227	58,140	44,179	34,884	101,745	77,313	61,047	145,350	110,447	87,210
	12	1.073	1.227	64,380	44,179	38,628	112,665	77,313	67,599	160,950	110,447	96,570